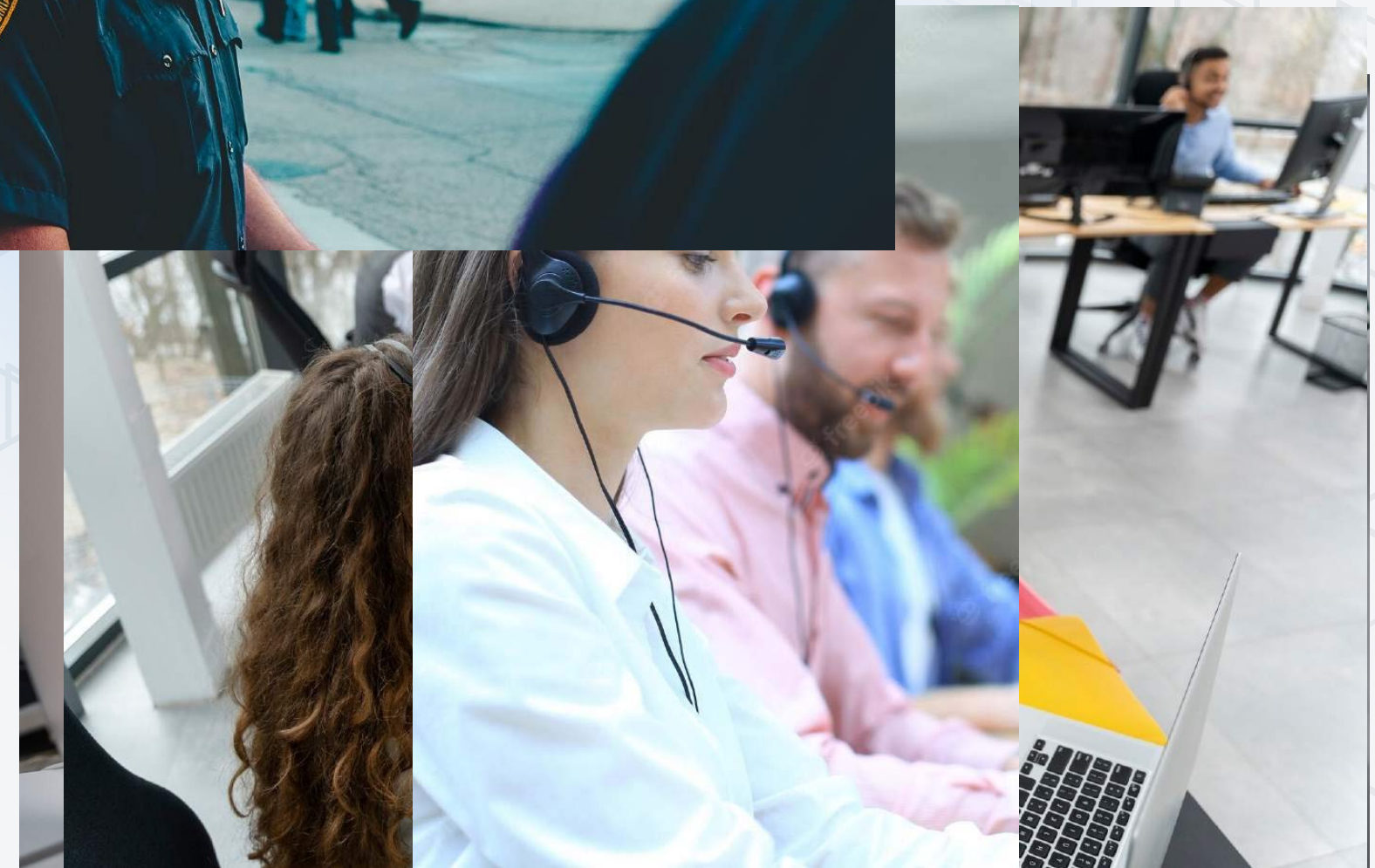
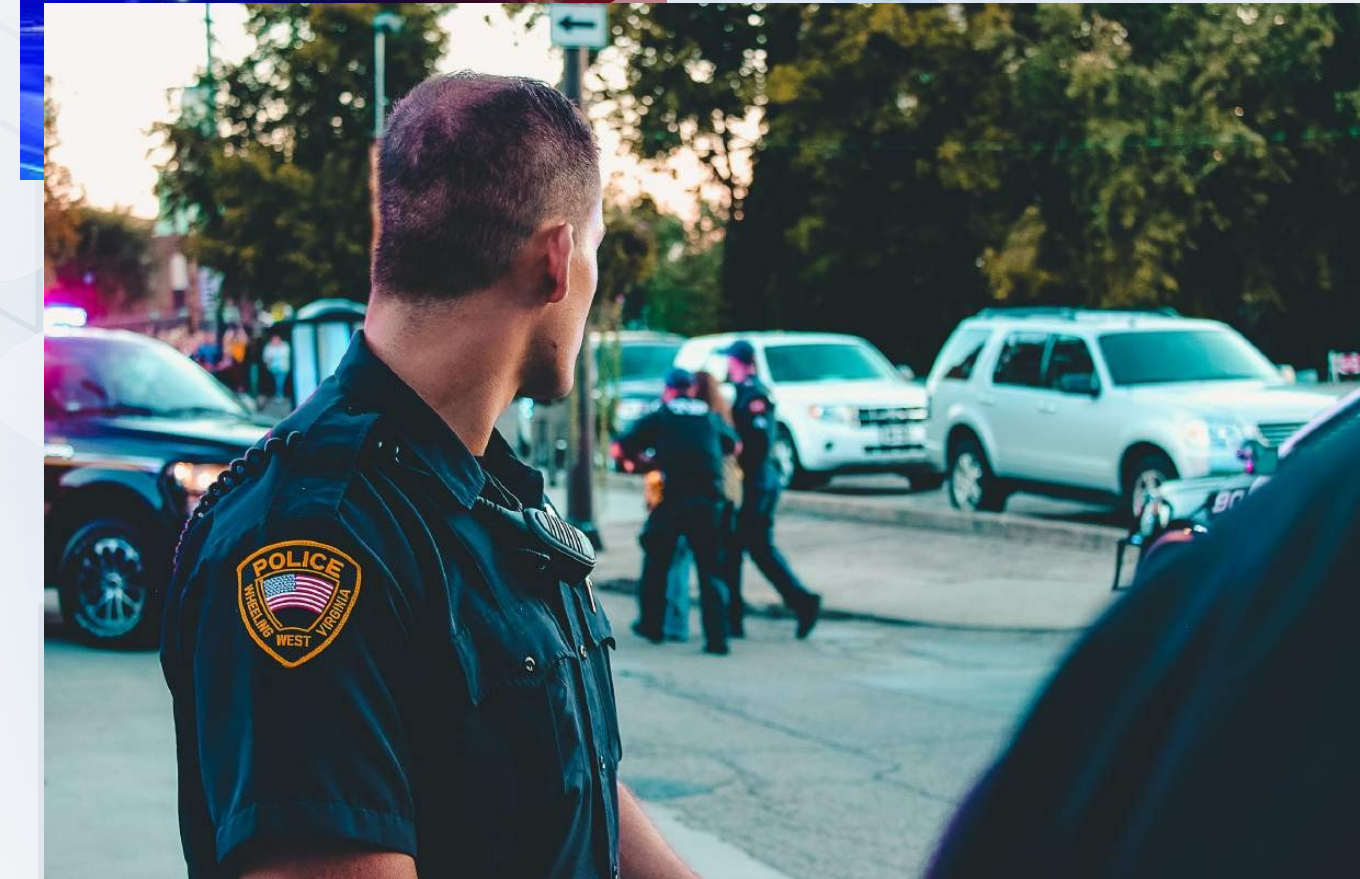


SMART DIGITAL SPATIAL PATCH

Efficiency, productivity and best results





SD Dispatch is a single digital platform for automating enterprise security management

Key Benefits of SD Dispatch



Reducing the response time of orders



Improving the efficiency of working orders and resource using



Transparency and end-to-end control at all levels over the timeliness and quality of work



Consolidation of all information flows on one platform with a high level of data protection



Consolidation of information for reporting, analytics and forecasting

System architecture

Centralized service-oriented architecture, all data is placed in a single database, which is a consolidated software package



Technology stack

The system was developed using high-level programming languages, as well as compatible libraries, frameworks and their individual fragments



HTML5



CSS3



Typescript



JavaScript



React



Redux



NestJS



Node.js



Java



Access to system services

This is done through a local area network thanks to which end users access the Enterprise Site server farm. Software modules that are deployed on the virtual machines of the system should work there.



To improve work efficiency

The complex may contain additional components: a messaging system between Rabbitmq service components, a distributed storage of key-value pairs stored in Redis RAM, and an open source document-oriented database management system (DBMS) MongoDB.



Clustering

Occurs on the basis of a Kubernetes cluster, which scales with a topology for several worker nodes. A connection to a distributed cluster storage is deployed on all worker nodes. This configuration ensures that the working state of the cluster is maintained in the event of a breakdown of one or more worker nodes.



Used DBMS

Main DBMS - Oracle Linux 8 or higher, PostgreSQL 12 or higher. If necessary, the DBMS can be located separately from the Kubernetes cluster. The components included in the software, in the course of operation, have the ability to exchange information based on open data exchange formats such as JSON/XML and others.

Main functions

Collection of up-to-date information about the positioning of resources with visualization of the geolocation of outfits in real time

Managing user access to the system, maintaining data integrity, logging all actions in the system

Acceleration and transparency of information exchange between the operator, dispatcher and patrol

Resource management and control over the performance of duty orders

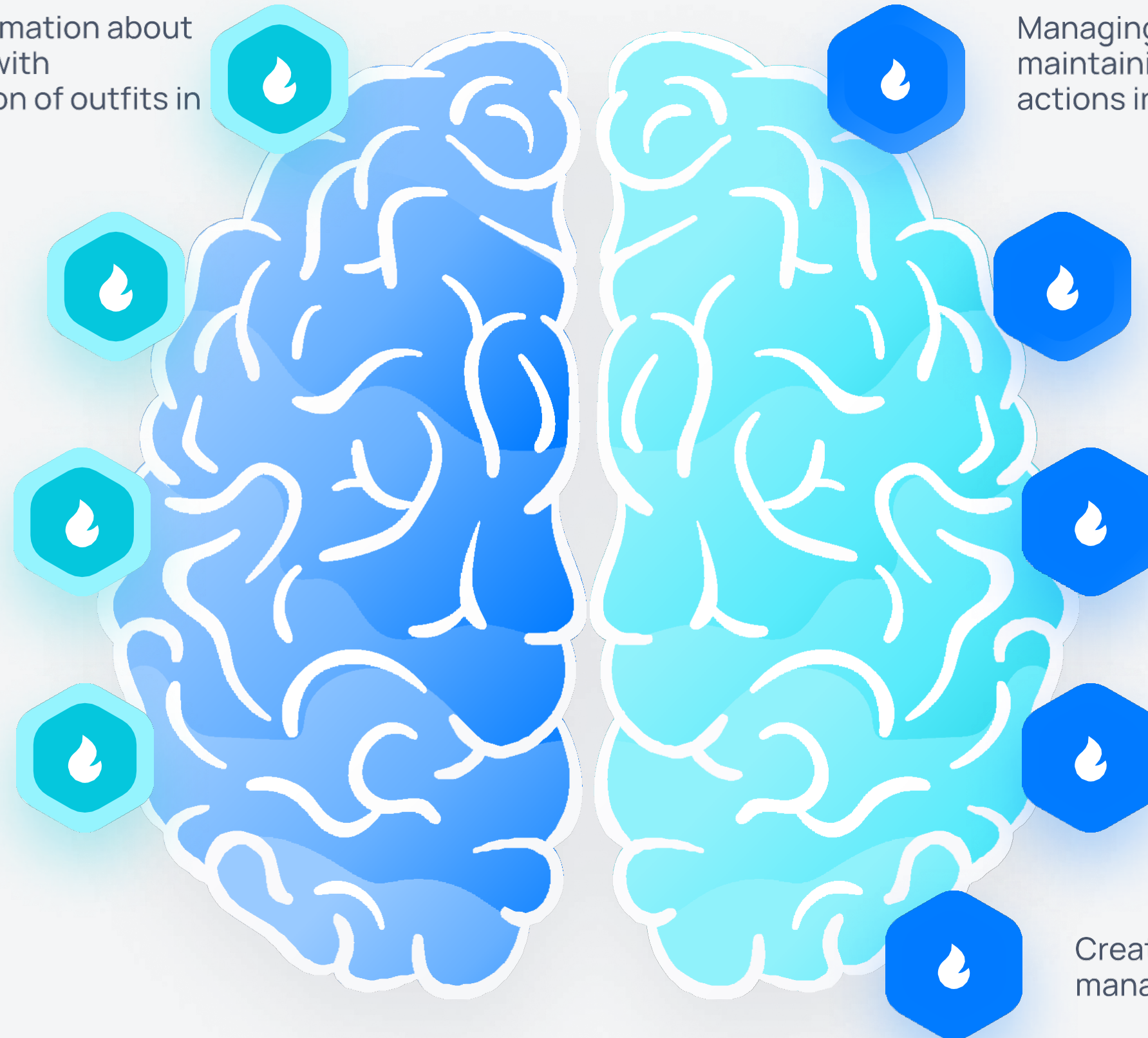
Improving the efficiency of organizational and managerial activities of units responsible for response

Strengthening accountability and responsibility based on the results of decisions made

Prompt informing of interested officials

Formation of a single resource management platform

Creation of analytical reports for TOP management



Additional functions

Expansion of communication channels for system users - chats, audio and video communications, chat bots

Implementation of electronic waybills - control of fuel and vehicle using

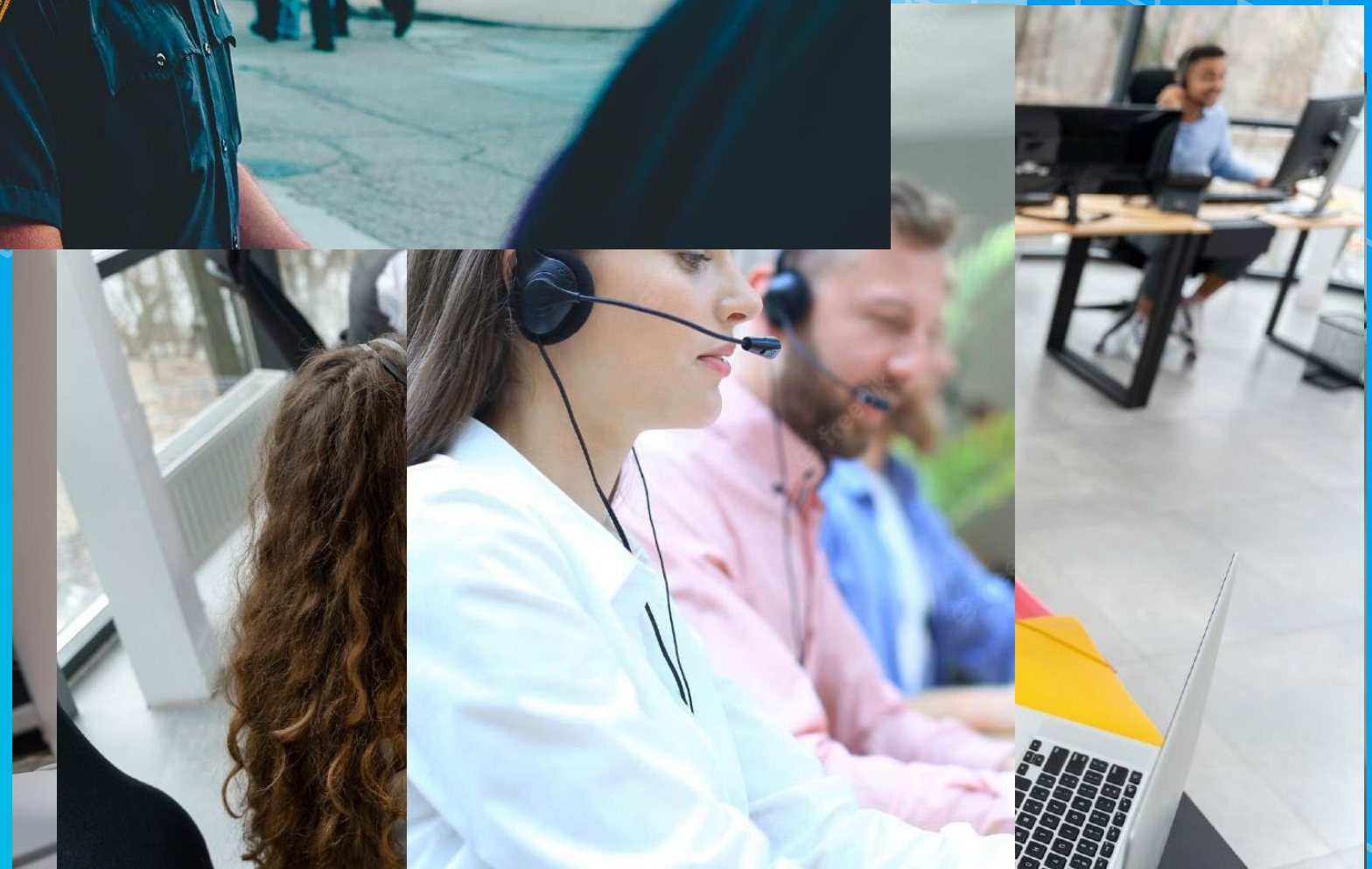
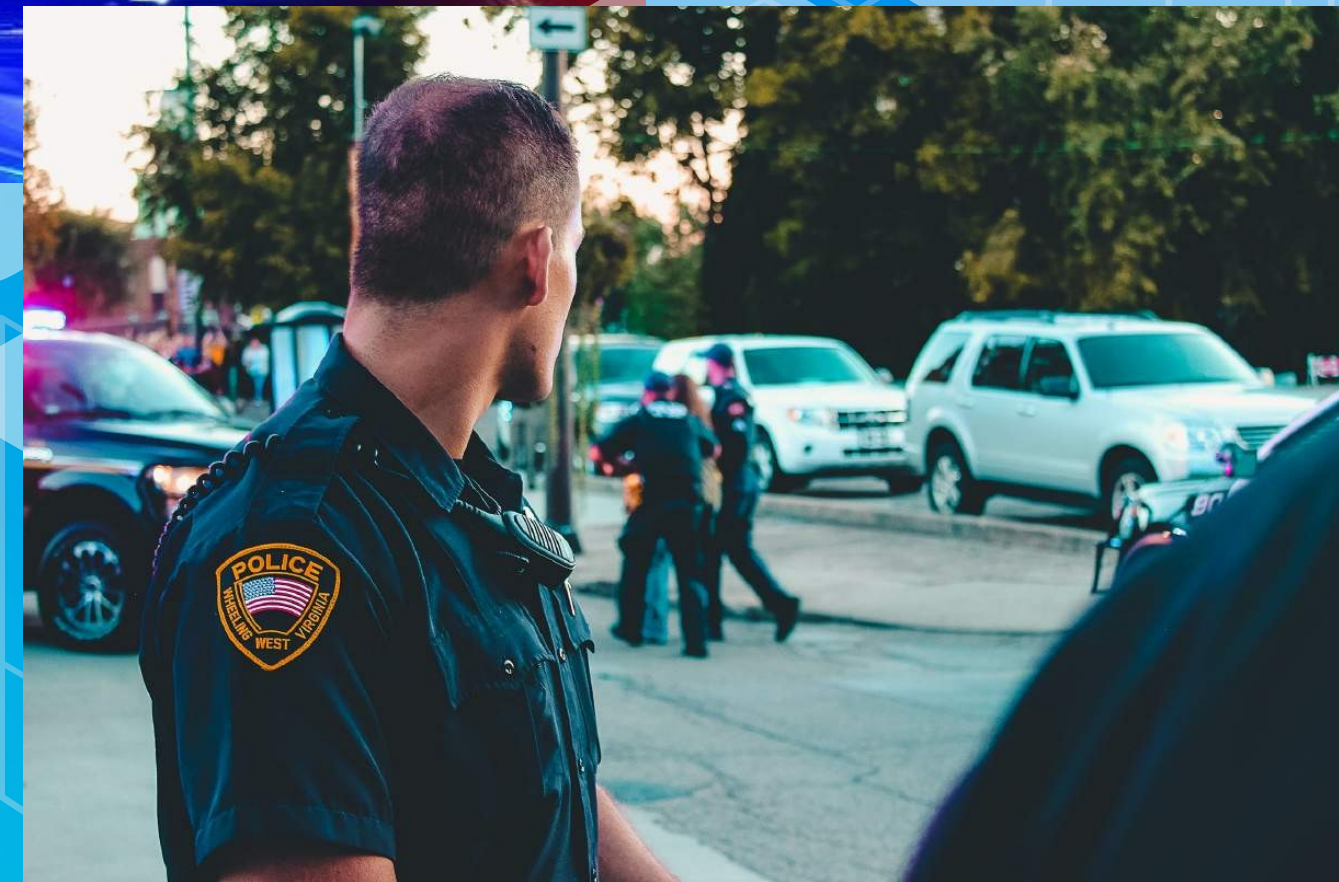
Using the system to conduct internal investigations - analysis of user actions in the system and the movement of patrols

Integration with the customer's internal management systems (ERP), security systems (video analytics, access control system, vehicle accounting system and others)



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Modules



Modules for system administration

Authentication and Authorization

Registration and activation of users in the system, controlled user access to the system - checking users and their rights to perform actions in the system, changing and confirming passwords by users

System administrator's cabinet

Management of organizational units of the organization structure, administrator accounts, technological directories, editing the logo and information about the system owner, managing system settings

User administrator cabinet

Maintaining a registry of system users, managing user access to the system, managing user roles, their rights and functionality

User cabinet

Editing an account, profile data, changing passwords, setting the interface language and notification method

GPS devices

Maintaining a register of GPS devices, forming a single database of GPS devices, receiving information from stationary GPS trackers installed on moving objects and from a special mobile application, receiving and broadcasting information about the current state of devices, accumulating information about movements for a period for display on the map

Modules for ensuring business processes

Digital passports of objects

Working with digital passports of objects with geolocation and adding data about these objects including multimedia

Geographic information system

Displaying maps, task execution statuses, viewing the locations of moving objects in real time and the routes of their movement over the period. Viewing and editing patrol zones, direct and reverse geocoding, long-term storage of data on the movement of patrols and providing fast data search according to specified criteria, loading and displaying orthomosaic and 3D models on the map (*.kml and *.kmz format)

Mobile application

The operation of the gadget as a GPS tracker, user registration in the system, sending task completion statuses, digital communication with the dispatcher. Obtaining information about incidents in digital form, joint work of several patrols within one incident, adding multimedia data from the scene to the system, compiling an electronic report

Patrolling

Working with geoinformation objects (routes, patrol zones) to provide a resource management system

Modules for ensuring business processes

Incidents

Creation and management of incidents, organization of a single digital information space for all users of the system, monitoring and control of the status of tasks performed by patrols for each incident, processing and display of electronic reports

Operator

Work with electronic cards of incidents, their processing and transfer for execution to the dispatcher. Integration with digital telephony systems for automatic creation of electronic cards is possible

Dispatcher

Maintaining a register of resources, assigning patrols to shifts and handling incidents, monitoring the status of the performance of certain tasks by patrols

Analytical portal

Automated creation of visualized reports (graphs, charts, dashboards) with flexible settings for different areas of work

Additional modules

Communications

Corporate communications of system users via chat, audio and video communications, corporate chat bots

Internal investigations

Work with logging data from all system modules. Retrospective analysis of the actions of users and system modules, records of tracks of the movement of patrols

Electronic waybill

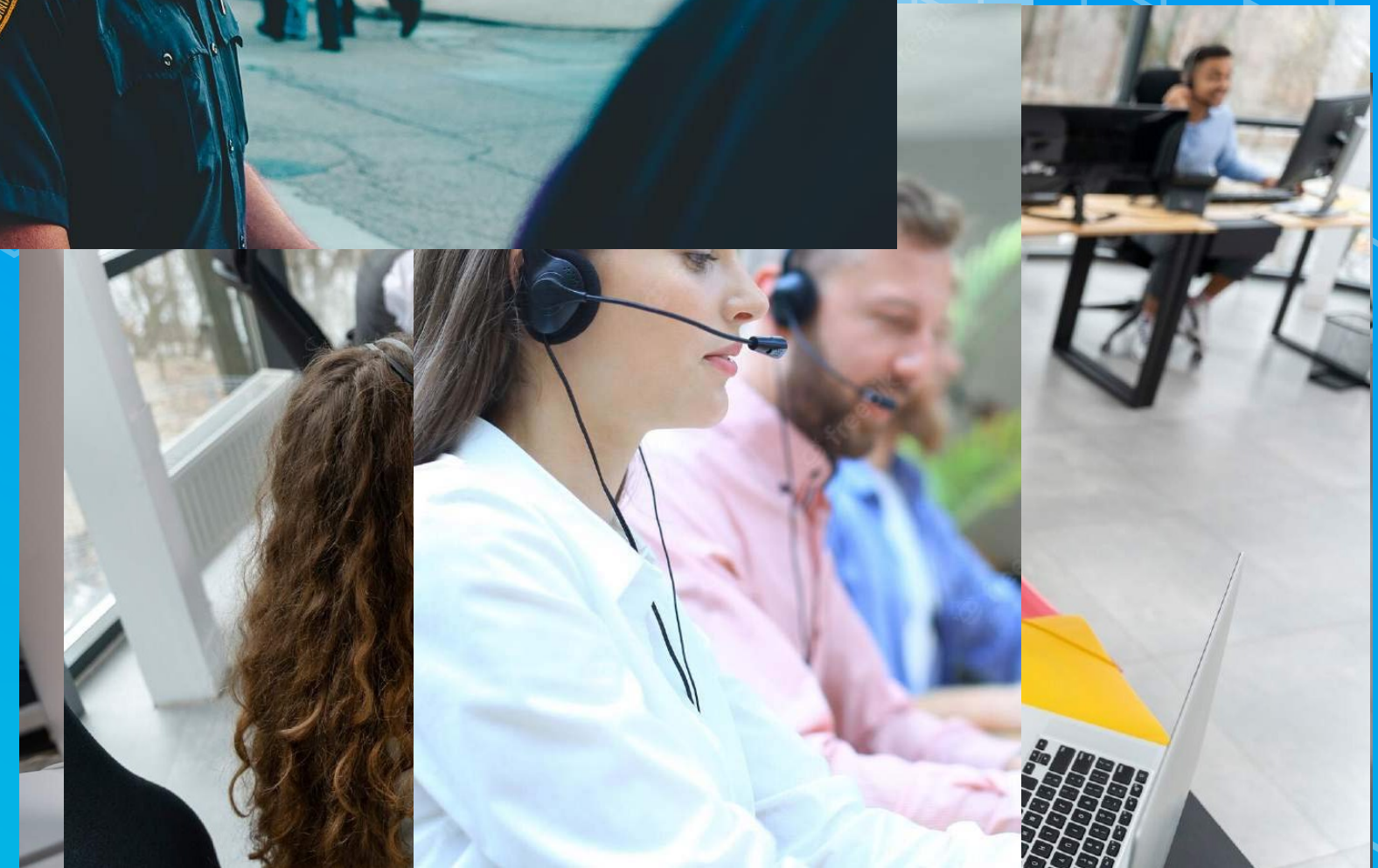
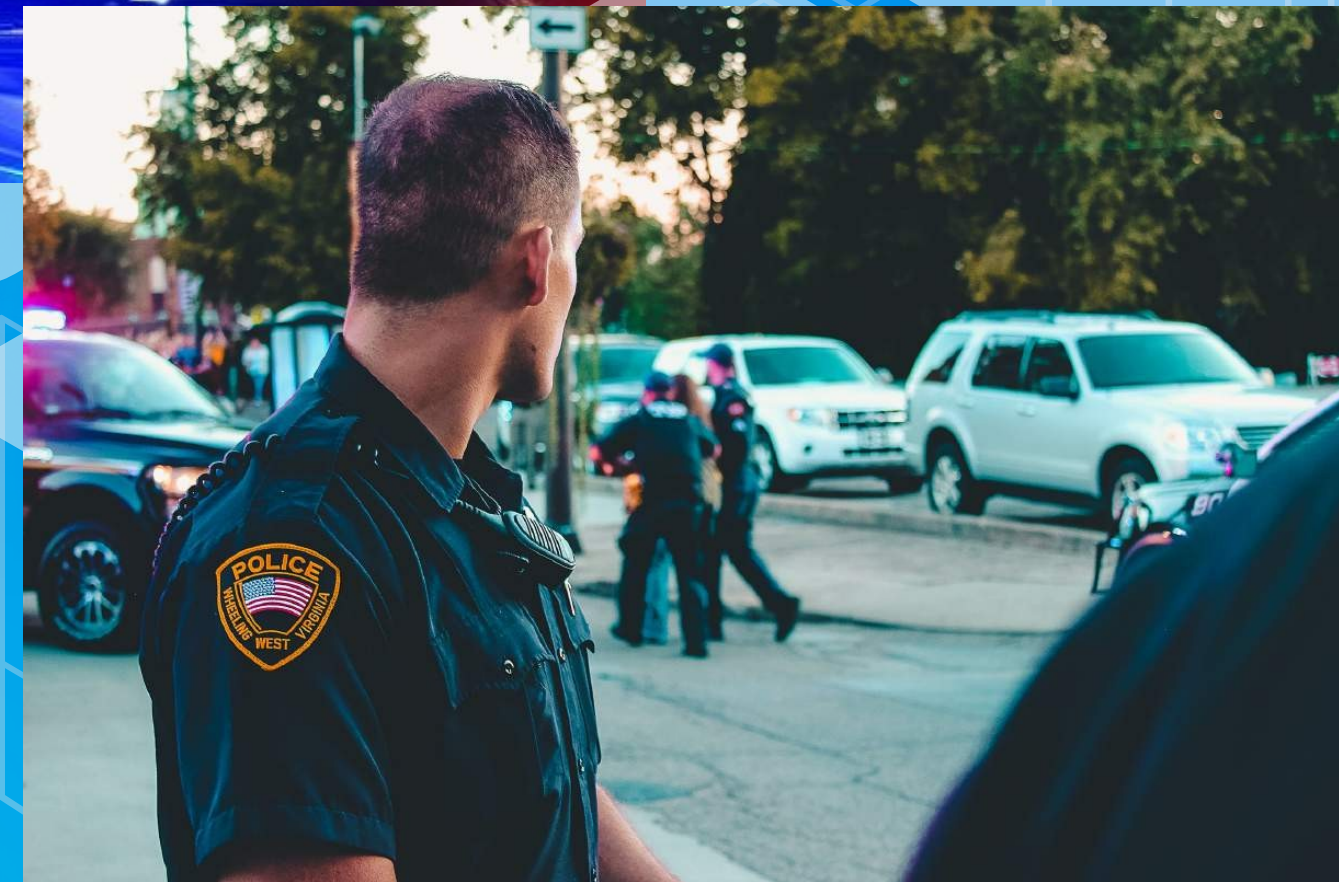
Working with data on planned and actually traveled distances by vehicles, monitoring fuel use

External integrations

Integration with the customer's internal systems (CRM, ERP) and various security systems (video surveillance, access control systems, vehicle accounting systems, unmanned aerial vehicle control systems, etc.)

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User roles



Roles in the system



Analyst

- ✓ work with digital passports of objects
- ✓ work with filling digital maps of objects
- ✓ work with media data
- ✓ work with patrol zones



Viewer

- ✓ access to all system modules in view mode
- ✓ system presentations



User Administrator

- ✓ work with system user profiles
- ✓ user role definition
- ✓ blocking/unblocking users



System Administrator

- ✓ working with system settings
- ✓ directories administration
- ✓ enroll/lock security administrators and user administrators
- ✓ keeping a register of GPS devices



Security Administrator

- ✓ working with system audit logs
- ✓ working with user activity logs
- ✓ accident investigation
- ✓ view history of movement of response
- ✓ teams (GIS)

Roles in the system



Operator

- ✓ receiving messages
- ✓ creating an electronic incident card
- ✓ transfer of an electronic incident card to the dispatcher



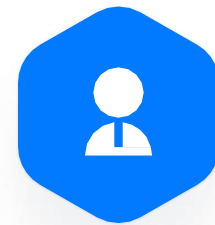
Dispatcher

- ✓ incident management
- ✓ resource management
- ✓ arrangement of patrols, construction of zones and patrol routes
- ✓ control of the location of orders in real time and the history of their movement (GIS)
- ✓ communication with outfits



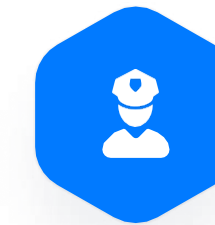
Senior dispatcher

- ✓ all manager functions
- ✓ editing patrol zones
- ✓ route editing
- ✓ editing passports of objects
- ✓ scheduling patrols



Drone dispatcher

- ✓ creation of electronic incident cards

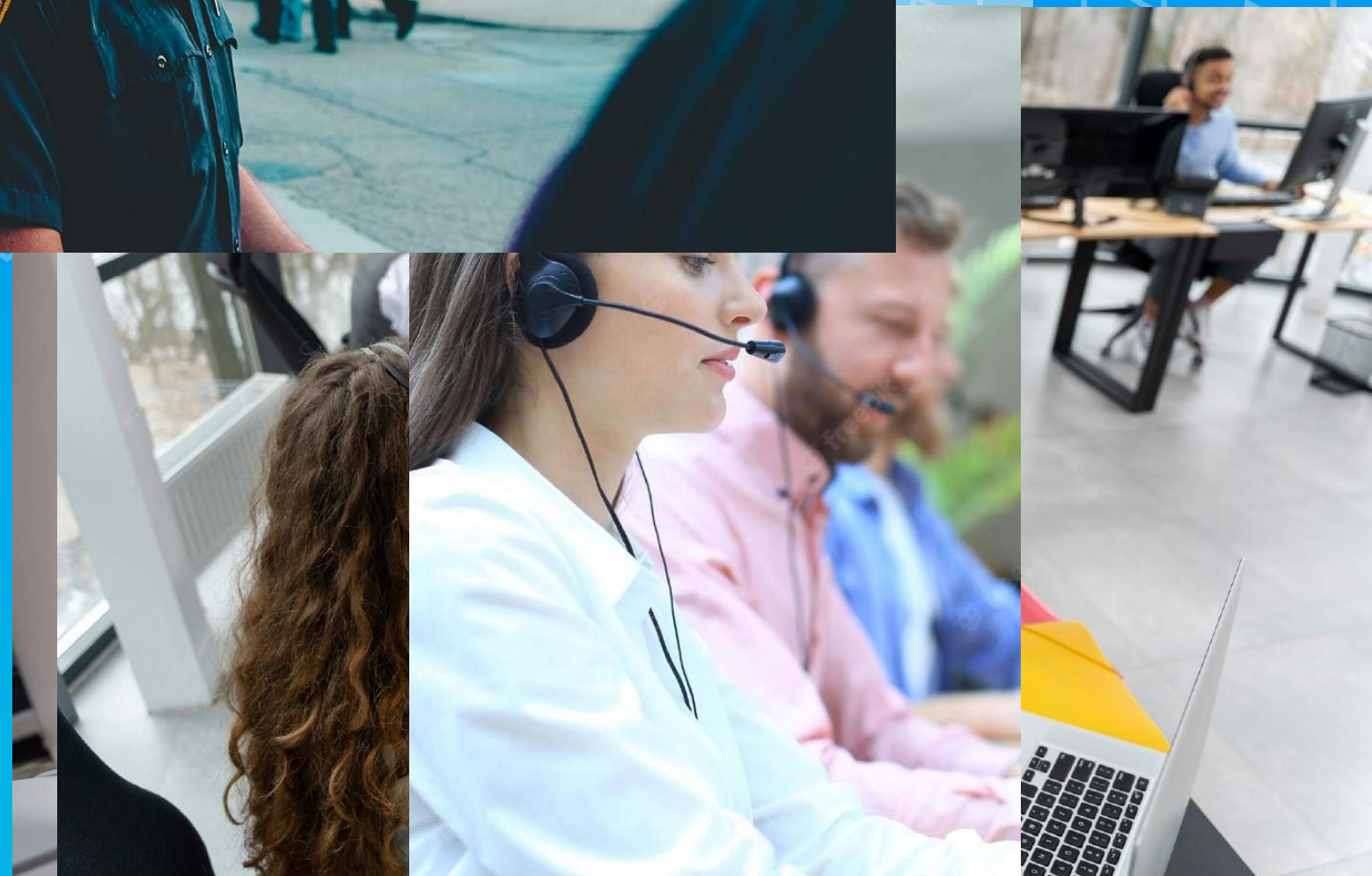
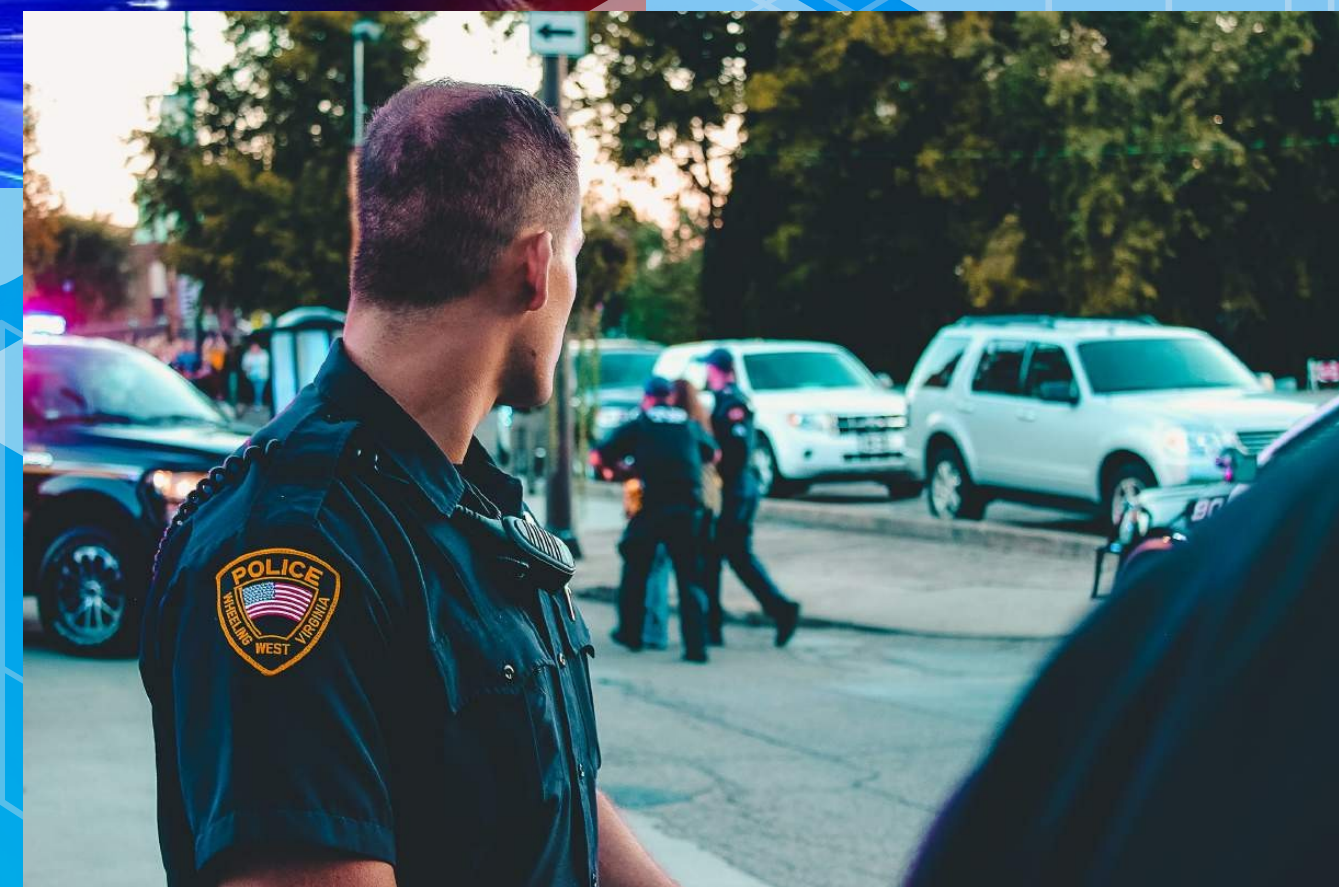


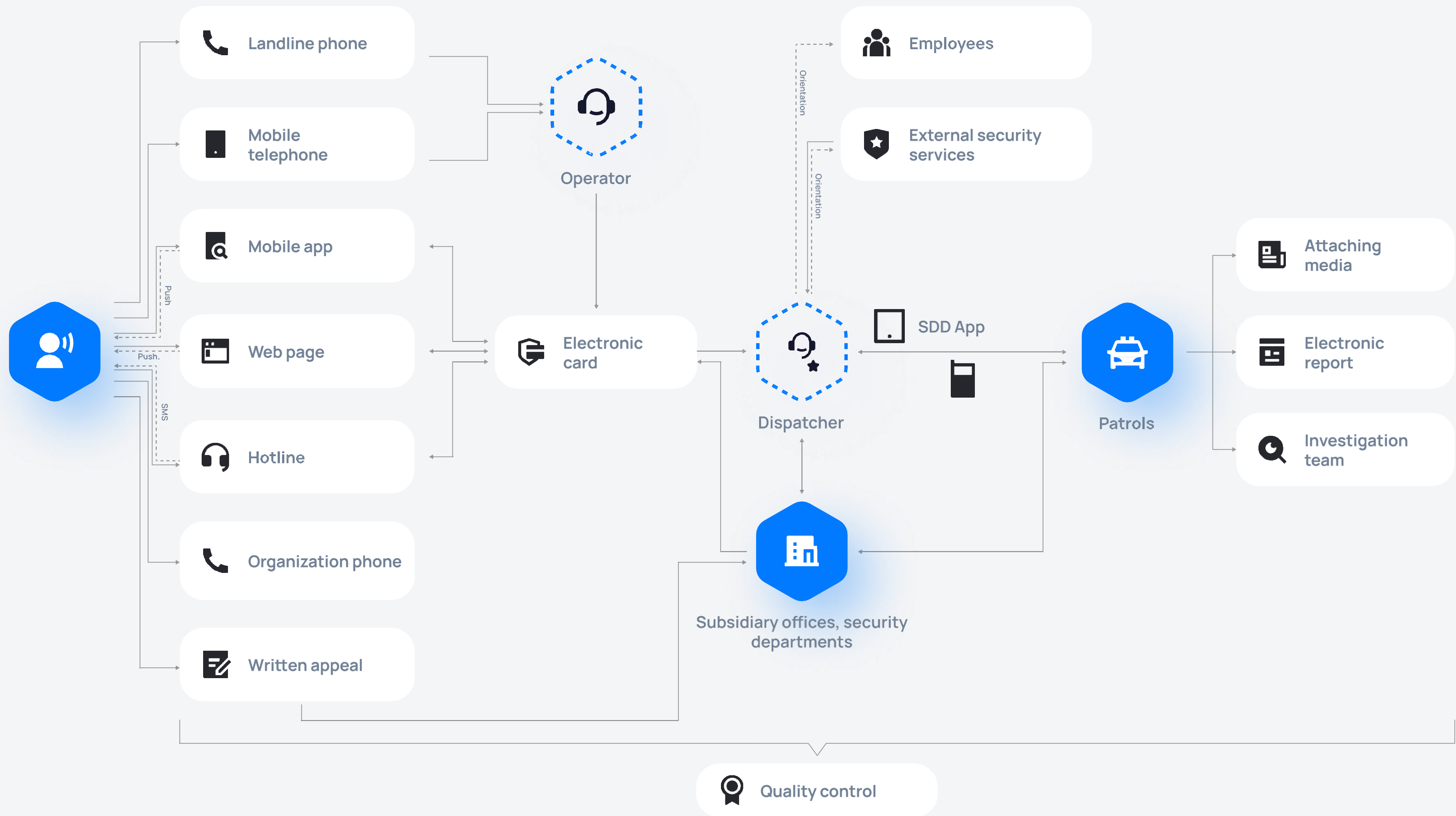
Patrol

- ✓ work with mobile application
- ✓ departure for an incident
- ✓ patrolling certain routes and zones, collecting information
- ✓ drawing up an electronic report

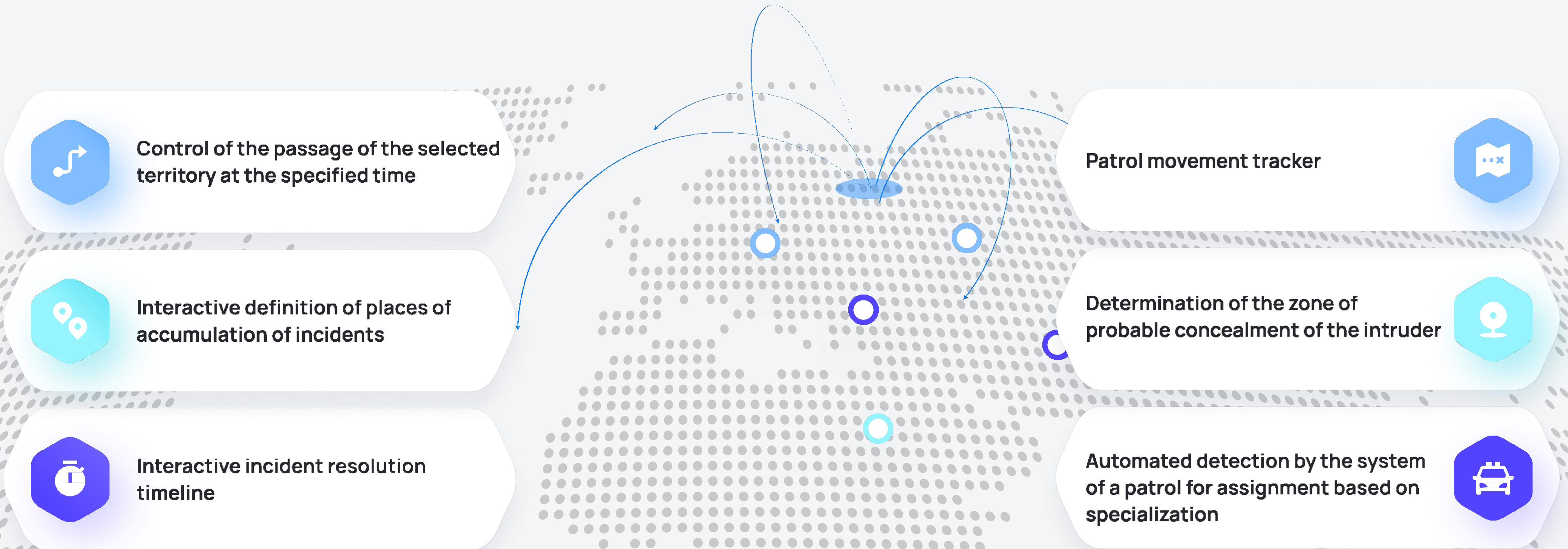
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How does it work





Some features of the system



Automation of the acceptance process and message accounting

Obtaining data by the operator

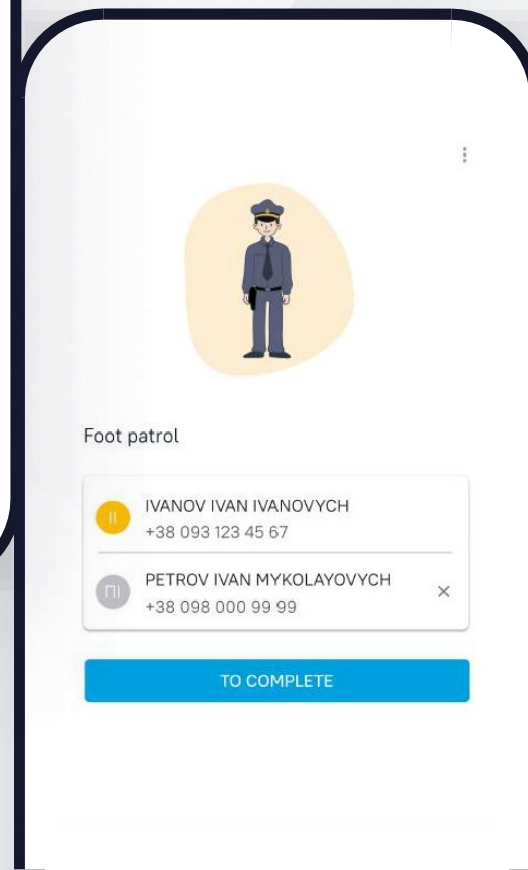
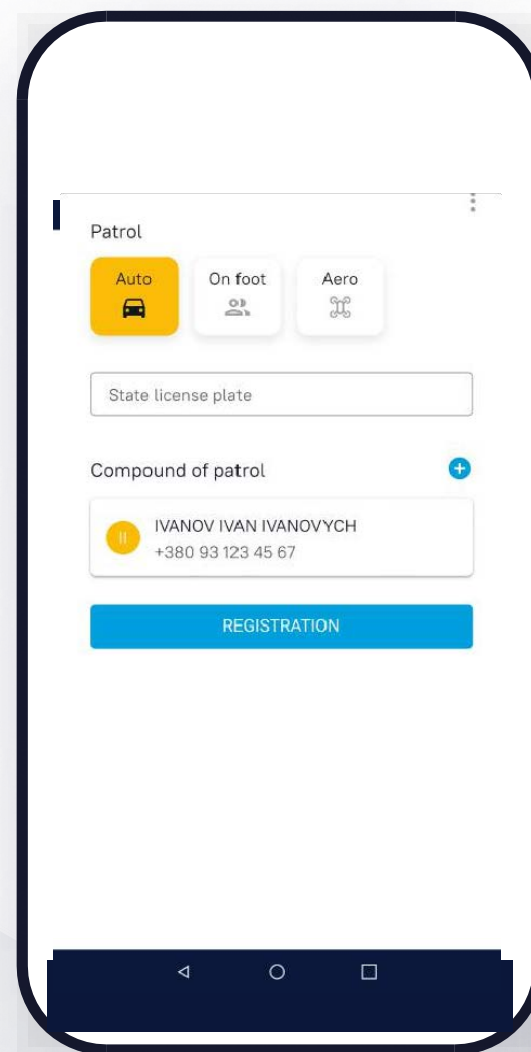
- ▶ information about the owner of the phone number
- ▶ the number of calls previously received from this number and regarding what incidents
- ▶ tracking of repeated calls on an already registered incident
- ▶ geolocation on the electronic card of the reported incident
- ▶ warning about calls of subscribers included in the list: mentally ill, telephone hooligans and others

Dispatcher



- Incident management for response and control
- Determining which patrol is closer to the scene
- Tracking the sequence of response to the event from the moment the patrol received the message about the event in the report on the results of the departure
- Implementation of communication through the mobile module of the platform (message to the patrol tablet)
- Building patrol zones and routes
- Order location control

Patrol



- Patrol of individual routes and zones
- Collection of suspicious information
- Incident response
- Implementation of communication through the mobile module of the platform (manager's message)
- Drawing up an electronic report
- Issuance of electronic rulings

Quality control

- ▶ Locations and status of outfits
- ▶ Patrol departure report for further internal investigation
- ▶ Working with patrol tracks
- ▶ Retrospective analysis of actions of users and system modules
- ▶ Working with audio recordings of calls

KPI of the system

1

All databases are collected on one server

2

Implemented centralized management of patrols

3

Number of patrol units connected to the system

4

Dispatcher management of all types of outfits

5

Reception by the operator of all types of calls

6

Growth in received messages

7

Reducing call processing time

8

Reduced message response time

9

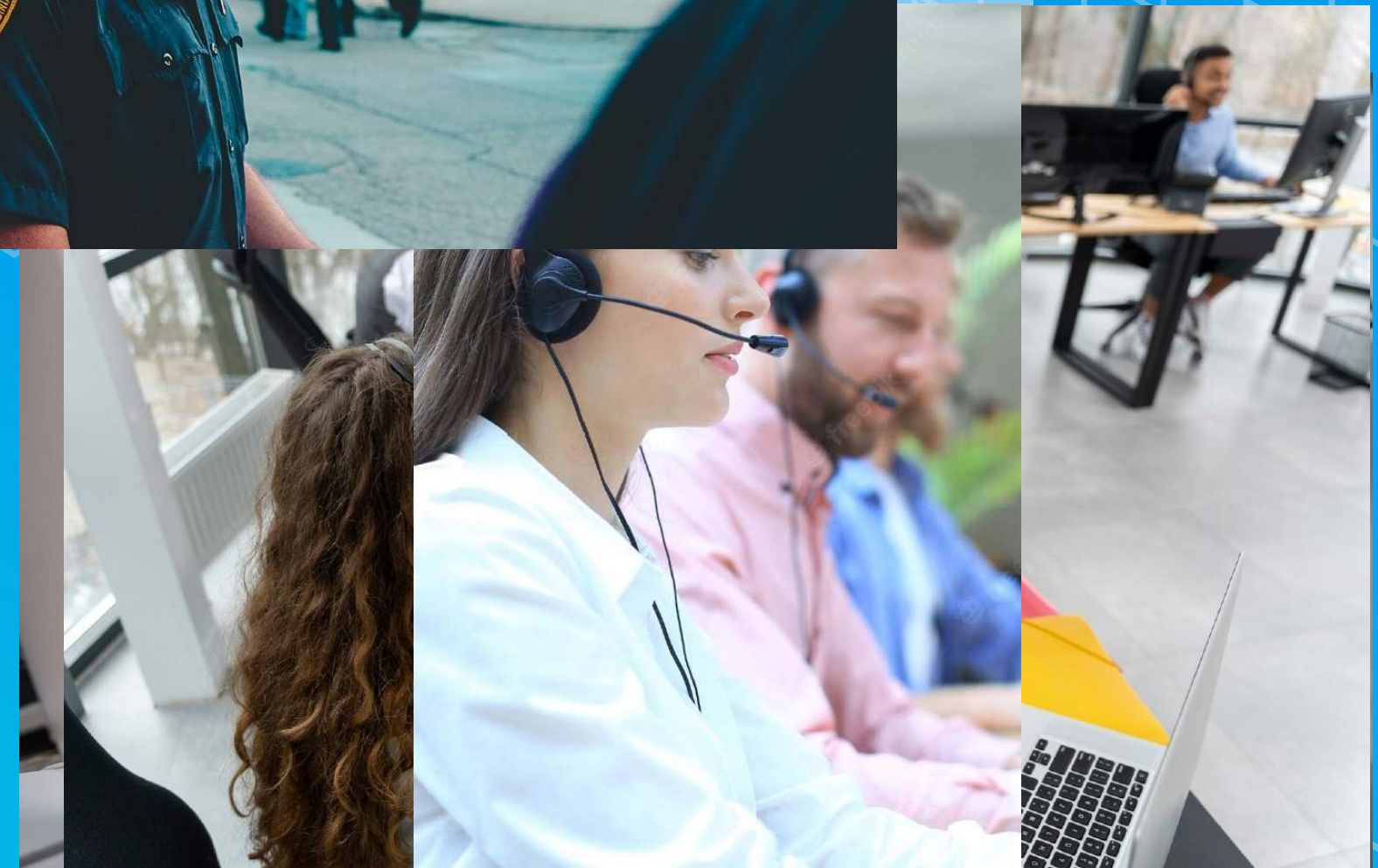
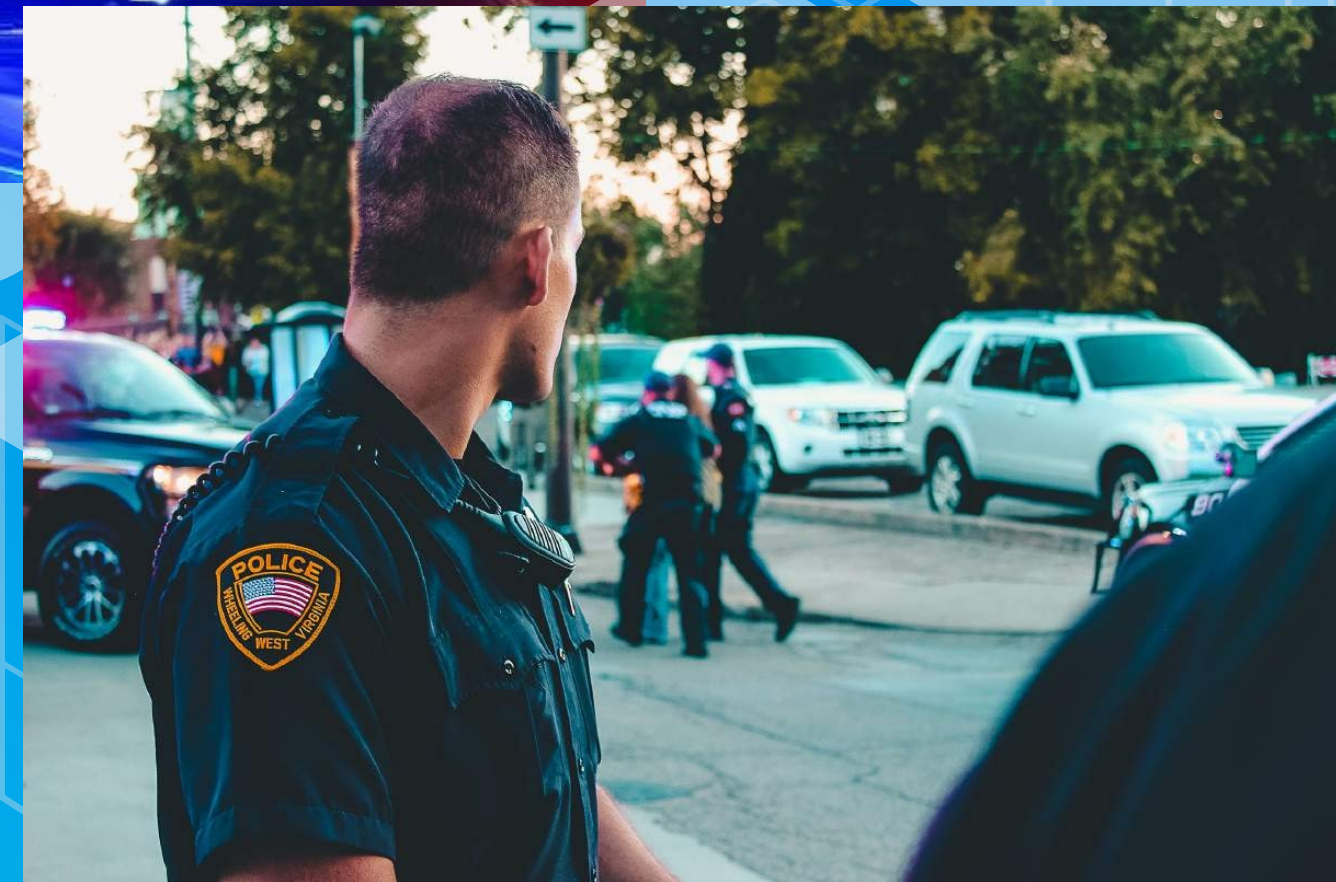
Increasing number of incidents resolved in hot pursuit

10


Reducing the number of complaints about the inability to get through

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Results of system implementation. Use cases



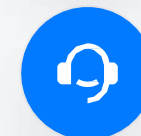
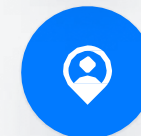



Main problems

-  Fixing messages on paper
-  Lack of technical ability to control the actions of patrols
-  Rejection of Incident Reporting
-  Tactless treatment

Implementation
SD Dispatch

Response system after reform

-  Centralized receipt of messages and their automatic registration
-  Urgent computerized transmission of information to the dispatcher for organizing a response
-  Feedback to the applicant and other employees who joined the conversation if necessary
-  Positioning patrols on the map
-  Electronic fixation of the results of work, preparation and sending of answers to the e-mail address of interested

Effects

- ✓ Ability to hide incidents from registration
- ✓ Call rejection
- ✓ Failure to send patrols to the scene
- ✓ Long wait for the arrival of outfits or their non-arrival

Result

- ✓ Inability to hide an incident from registration
- ✓ Possibility of directing the nearest outfit to the scene
- ✓ Task progress tracking
- ✓ Attracting the required number of patrols in the shortest possible time
- ✓ Management of all types of patrols



Use for good!

SMART DIGITAL DISPATCH